

DIRECT TESTIMONY OF EDDY MOORE
ON BEHALF OF THE SOUTHERN ALLIANCE FOR CLEAN ENERGY, SOUTH
CAROLINA COASTAL CONSERVATION LEAGUE, UPSTATE FOREVER,
VOTE SOLAR, AND THE NORTH CAROLINA SUSTAINABLE ENERGY
ASSOCIATION

DOCKET NOS. 2021-143-E, 2021-144-E

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. WHAT IS YOUR NAME AND YOUR CURRENT JOB TITLE?**

3 A. My name is Eddy Moore and I am the Energy & Climate Program Director for the
4 South Carolina Coastal Conservation League (“CCL”).

5 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

6 A. I am testifying on behalf of CCL, the Southern Alliance for Clean Energy
7 (“SACE”), Upstate Forever, Vote Solar, and the North Carolina Sustainable Energy
8 Association (“NCSEA”).

9 **Q. HAVE YOU TESTIFIED BEFORE THIS COMMISSION BEFORE?**

10 A. Yes. I testified in Docket No. 2019-239-E, Dominion Energy South Carolina’s
11 (“DESC”) Request for Approval of an Expanded Portfolio of Demand Side
12 Management Programs, and a Modified Demand Side Management Rate Rider, on
13 behalf of SACE, CCL, and the South Carolina State Conference of the NAACP. I
14 also testified in Docket No. 2020-229-E concerning DESC’s Solar Choice tariff
15 proposal, and Docket Nos. 2020-264-E and 2020-265-E concerning the Solar
16 Choice tariffs for Duke Energy Carolinas and Duke Energy Progress (collectively,
17 “Duke Energy” or “the Companies”).

1 **Q. PLEASE STATE YOUR QUALIFICATIONS.**

2 A. Over the past approximately fifteen years, I have worked extensively in the field of
3 clean energy policy and utility regulation. In my role as the Energy and Climate
4 Program Director for CCL, I manage our program of non-profit advocacy to
5 achieve a wide range of clean energy goals, from opposing offshore oil drilling to
6 the expansion of energy efficiency (“EE”) and renewable energy. Prior to my
7 current role, I was an attorney and Administrative Law Judge for the Arkansas
8 Public Service Commission, where I advised the Arkansas Commission on public
9 utility and energy law and policy, including expanding Arkansas’ net metering
10 program and its utility-funded EE programs.

11 I have helped draft and implement customer-based distributed energy
12 resource legislation or regulations in three states: California, Arkansas, and South
13 Carolina. In particular, in South Carolina when the V.C. Summer nuclear project
14 was abandoned, I worked with Kenneth Sercy, then my colleague at CCL, to
15 propose omnibus legislation (introduced as H.4425 in 2018 by Representative
16 James Smith) in response, which included Integrated Resource Planning, expanded
17 EE programs, and repeal of the Base Load Review Act. That legislation did not
18 pass, but when later net metering legislation also failed (H.4421 in the same
19 session), the conservation community and solar industry worked together to
20 propose a second omnibus bill combining IRP, distributed generation, and other
21 provisions: the Energy Freedom Act (H.3659). This legislation became Act 62.

22 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
23 **PROCEEDING?**

1 A. My testimony supports Commission approval of the Smart \$aver Solar Energy
2 Efficiency program that Duke Energy is proposing in this Docket.

3 **Q. WHY DO YOU SUPPORT THIS PROGRAM?**

4 A. As a general matter, there are good policy reasons to coordinate customer-based EE
5 and customer-based renewable electricity generation in a unified manner. For
6 decades, these types of customer-based resources have been treated differently by
7 utilities and by regulators. But these resources provide similar benefits to the utility
8 system that can be enhanced if they are integrated.

9 Ultimately, it is good for all utility customers if customers use efficient
10 equipment, if they voluntarily shift loads to meet system needs, and if they invest
11 in clean generation—such as rooftop solar—that is co-located with their loads.
12 Longstanding EE policy provides a suitable framework to analyze and promote
13 these outcomes. Laudably, through this proposal, Duke Energy has built upon the
14 EE policies that the Commission already has in place to promote EE, customer-
15 based renewable energy, and demand response in a coordinated fashion. As I will
16 explain below, tying the Smart \$aver Solar incentive to the winter-focused demand
17 response program and the new dynamic time of use (“TOU”) rates that the
18 Commission adopted for solar choice net metering customers will help in
19 overcoming barriers to adoption of these novel rate design and load-control
20 programs, providing benefits to all ratepayers.

1 Also, it is important to note that the Companies have committed that savings
2 from the Smart \$aver Solar program will be additional to, and therefore not
3 undermine, its other EE program energy savings.¹

4 **Q. WHAT SPECIFIC TYPE OF SOLAR ENERGY SAVINGS IS THIS**
5 **PROGRAM DESIGNED TO INCENTIVIZE?**

6 A. This program is designed to incentivize the reduction of utility load caused by the
7 portion of customer-produced solar energy that is consumed behind the meter. This
8 portion of customer solar production will reduce the primary energy—such as coal
9 and natural gas—consumed by power plants to meet the needs of all ratepayers. As
10 the Commission found in the generic docket for valuing distributed energy
11 resources (Docket No. 2019-182-E), behind the meter consumption of on-site
12 rooftop solar electricity is equivalent to EE, from the perspective of the grid.²

13 **Q. SO THIS PROGRAM IS NOT AIMED AT THE PORTION OF SOLAR**
14 **PRODUCTION THAT FLOWS ONTO THE GRID?**

15 A. That is right. It attempts to increase the amount of load reduction caused by self-
16 consumption of solar power, aggregated across the whole group of program
17 participants.

18 **Q. HOW WILL WE KNOW IF IT ACHIEVES THE PROJECTED SOLAR**
19 **LOAD REDUCTIONS?**

20 A. All EE programs must undergo independent Evaluation, Measurement, and
21 Verification (“EM&V”). This process provides a periodic, statistically-rigorous
22 evaluation of the actual results of the program, so that it can be verified, and if

¹ Direct Testimony of Tim Duff at 7, Dkts. 2021-143-E, 2021-144-E.

² Commission Order No. 2021-569 at 9-10, 52, Dkt. 2019-182-E.

1 necessary, modified and improved. Once enough data has been collected to evaluate
2 the program, a third-party evaluator will prepare a report detailing the results. This
3 is a beneficial feature, generally, of demand-side programs as a utility resource:
4 unlike central-station power plants, demand-side programs are continuously
5 evaluated after implementation for cost-effectiveness and performance, and can be
6 flexibly adjusted, improved, or eliminated as conditions change.

7 **Q. DOES THE SMART SAVER SOLAR PROGRAM APPLY TO ALL SOLAR**
8 **CUSTOMERS?**

9 A. No. Only all-electric customers would be eligible to participate, and those who
10 choose do so must also agree to sign up for the Bring-Your-Own-Thermostat
11 demand response program for the next 25 years, allowing the utility to reduce their
12 winter demand during hours when the utility system needs it.

13 **Q. IS THE SELF-CONSUMPTION OF SOLAR POWER PLUS WINTER**
14 **DEMAND RESPONSE AN EXAMPLE OF THE SYNERGIES AVAILABLE**
15 **BY INTEGRATING SOLAR WITHIN THE EE POLICY FRAMEWORK?**

16 A. Yes. All-electric residential customers contribute significantly to both of the two
17 expensive seasonal peaks on the utility system: their air conditioning demand adds
18 to the summer peaks, which are more frequent and last longer, and their water and
19 heating demand drives winter peaks, which have become the focus of Duke
20 Energy's utility resource planning. This program effectively tackles both of those
21 peaks. Because all-electric customers tend to use more electricity than dual-fuel
22 customers, this program also naturally selects a group of customers with larger

1 electric demand and introduces them to efficiency and demand-response
2 opportunities that they might not otherwise consider.

3 While this program only includes solar plus demand response at this stage,
4 there is strong potential for further integration of solar and EE within this program.
5 For instance, an efficient home will need a smaller solar system, and a solar home
6 has a reduced cooling load due to shading provided by the panels. A home
7 optimized for these two effects will incur lower costs for solar and cooling,
8 maximize energy and carbon reductions, and provide smaller range of variability
9 to the grid. It will also be more easily served with battery storage, which offers
10 more opportunities for utility coordination.³

11 Also, solar customers may be particularly ripe for education and ready to
12 take action on energy savings opportunities more broadly. There is also some
13 evidence that they may be more likely to consider purchasing electric vehicles, and
14 should be incentivized to avoid vehicle charging during system peaks.⁴ In my mind,
15 these are all reasons to begin specifically involving solar customers—and
16 particularly all-electric solar customers—in demand response and EE.

17 **Q. DOES THE SELF-CONSUMED PORTION OF SOLAR PRODUCTION**
18 **ITSELF PRODUCE EFFICIENCY SAVINGS?**

³ For further discussion of the benefits of EE/solar program integration, see Srivastava et al., American Council for an Energy Efficient Economy, *Integrating Energy Efficiency, Solar, and Battery Storage in Utility Programs*, at 18-23, available at <https://www.aceee.org/research-report/b2001>.

⁴ See, e.g., Bob Delman, Solar United Neighbors, *Survey Examines Solar's Strong Connection with Electric Vehicles* (Feb. 14, 2018), available at <https://www.solarunitedneighbors.org/news/survey-examines-solars-strong-connection-electric-vehicles/>; see also Zachary Shahan, CleanTechnica, *EV Ownership + Rooftop Solar Ownership—New Report and Charts* (Dec. 25, 2019), available at <https://cleantechnica.com/2019/12/25/ev-ownership-rooftop-solar-ownership-new-report-charts/>.

1 A. Yes. It not only reduces load, but it also increases utility system efficiency because
2 it avoids line losses on both the transmission and distribution systems, like other
3 EE measures.⁵ Less total energy is needed to serve load at times when solar
4 customers serve their own loads.⁶

5 **Q. IS THIS PROGRAM A MERE PAIRING OF EE AND SOLAR?**

6 A. No, it also represents purposeful coordination between the Solar Choice TOU rate
7 and the EE incentive.

8 **Q. WHY IS THAT SIGNIFICANT?**

9 A. Often, rates and EE programs are developed completely separately. This can lead
10 to rates and EE programs working at cross-purposes or at least not being optimized.
11 For instance, a special low rate meant to ensure the availability of low-cost winter
12 heating may send the opposite signal as an EE program rebate aimed at more
13 efficient water heating or a demand response program aimed at shifting load off of
14 system peaks.

15 In this case, however, the TOU rate plus the Smart Saver Solar program sets
16 up a coordinated environment which encourages the most critical sub-set of solar
17 customers to modify their energy consumption to the benefit of all ratepayers. Both
18 the Solar Choice TOU rate and Smart Saver Solar program achieve this through an
19 effective combination of “carrots and sticks” that incentivize customer behavior.
20 For example, under the TOU rate, the high cost times—like the peak periods and
21 critical peak prices—are a stick that encourages the solar customer to avoid adding
22 to winter or summer peaks. The low-cost times reward the customer for shifting

⁵ Direct Testimony of R. Thomas Beach at 18, Dkts. 2020-264-E, 2020-265-E.

⁶ *Id.* at 22.

1 load to off-peak times, when it costs less to serve customers' energy needs. The
2 Smart Saver Solar program, itself, also includes carrots and sticks. The upfront
3 rebate is a carrot, but the \$200 penalty for failing to respond to winter peak is a
4 stick. Thus, the Smart Saver Solar incentives (both negative and positive)
5 complement and reinforce those in the TOU rate.⁷

6 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

7 A. I recommend that the Commission approve the Companies' Application for
8 approval of the Smart Saver Solar EE Program on the basis that it meets the
9 purposes and definitions of an energy reduction or efficiency program, that it is
10 beneficial for ratepayers as a whole, and is in the public interest. I believe it is not
11 only a positive program in itself, but that the Commission's approval of the program
12 would support improved coordination between efficiency and distributed
13 renewable generation and between demand-side management and rate schedules, a
14 result that is in customers' best interest.

⁷ Indeed, Mr. R. Thomas Beach testified in the Docket establishing the current solar choice TOU rate, regarding evolving battery, smart thermostat and other DER technologies, that "TOU rates will become an essential platform to unlock the benefits of these emerging technologies." Direct Testimony of R. Thomas Beach at 18, Dkts. 2020-264-E, 2020-265-E.

CERTIFICATE OF SERVICE

I hereby certify that the parties listed below have been served via first class U.S. Mail or electronic mail with a copy of the *Direct Testimony of Eddie Moore* on behalf of South Carolina Coastal Conservation League, Southern Alliance for Clean Energy, North Carolina Sustainable Energy Association, Upstate Forever, and Vote Solar.

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This 21st day of September, 2021.

S/Kate Lee Mixson